Navy Responses to EPA Comments on the Navy's Interim Responses to Comments on the Draft Final Feasibility Study Calf Pasture Point (Site 07) NCBC Davisville, Rhode Island

This document contains the Navy's responses to EPA's comments (dated 1 July 1997) on the Navy's Interim Responses to EPA Comments (dated 28 May 1997) on the Draft Final Site 07 Feasibility Study (FS) (dated April 1997). The Interim Response to Comments document also contained a conceptual Long-Term Monitoring Plan (LTMP) for Site 07. The Navy will present a revised version of the conceptual LTMP at the 22 July 1997 BCT meeting.

GENERAL COMMENTS

Comment: Most of the EPA comments on the Draft Final Feasibility Study focused on the adequacy of the monitoring wells proposed for long-term monitoring with some questions focused on performance monitoring. It is assumed that it is the Navy's intent to apply the ***Conceptual*** Long-Term Monitoring Plan (LTMP) for Calf Pasture Point submitted with the Navy's RTC on the Draft Final FS, which was designed primarily on the basis of Alternative 2, to all the alternatives, with some modifications to the Conceptual LTMP based on possible redundancies of sampling points between long-term monitoring and performance monitoring.

EPA understands that the LTMP submitted by the Navy with the FS RTC is conceptual in nature and as such should not be represented as BCT agreement on specific scale down criteria or media to be sampled. The specific scale down methodology and exit criteria will be determined during the RD and need to be evaluated based on the content of the data gathered, (5 year reviews). The following comments include some specific areas of EPA's concerns and other comments which were not adequately addressed in the FS RTC. EPA has also provided comments on the LTMP for discussions during the RD.

If the FS & LTMP are revised in accordance with the following comments, they will become adequate for the purposes of moving toward the next step in the remedial process. Please provide change pages for our review prior to issuing the PP.

Response: At the 22 July 1997 BCT meeting, the Navy will present a revised version of the conceptual LTMP. For the Final FS, the Navy will incorporate portions of the conceptual LTMP into the Remedial Alternatives (except for the No Action alternative) similar to what was done in the Draft Final Proposed Plan (dated 2 July 1997). Because the details of the long-term monitoring program to be employed at Site 07 will not be determined until the Remedial Design phase, specific sampling locations etc. will not be emphasized in the FS. The FS will contain revised costs and will discuss that selected upgradient, downgradient, and side-gradient wells will be included for sampling of selected COC and, as

warranted, shoreline seeps and sediment/surface water from interior wetlands based upon trends observed from the analyses of ground-water samples.

The Navy acknowledges that the conceptual LTMP will be modified during the Remedial Design phase. At that time, the LTMP will be reviewed and agreed upon by the Navy, EPA, and RIDEM. One of the main goals of the conceptual LTMP is to show that the site continues to pose no unacceptable risks to human health and the environment. Because there are little or no unacceptable risks currently identified for human health or the environment, the Navy believes it appropriate that the program can be scaled down if data trends continue to show no unacceptable risk and/or reduced/stable COC concentrations. Scale-down methodology and exit-criteria will be established and agreed upon by the BCT during the Remedial Design phase. The Navy agrees that the data collected during the monitoring program will provide the basis for re-evaluations of the scope over time.

The revised version of the conceptual LTMP and the responses to comments presented in this document will be discussed during the 22 July 1997 BCT meeting.

SPECIFIC COMMENTS

1. **EPA Rebuttal to Navy Responses on EPA Comments #2 and 75 (from 28 February 1997 comments on the Draft FS) and Comment #2 (from 5 May 1997 comments on the Draft Final FS)**

The Navy has indicated that they believe §264.101, rather than §264.90 through §264.100, is the most relevant for Site 7. EPA disagrees and believes both should be noted as relevant and appropriate. 40 CFR 264(a)(2) does not specifically prohibit SWMUs from being subject to the requirements of §264.90 through §264.100. EPA believes that the detailed requirements set forth in this section are most appropriate to this site. In discussions during the scoping of the FS, the Navy had indicated that they would not willingly negotiate monitoring of the contamination migrating beyond the facility boundary unless the EPA could cite a written requirement to do so. The Navy has not demonstrated a willingness to protect human health and the environment against the low risks caused by the contamination on site by containing or treating the contaminated ground water as evidence by the draft proposed plan stating Alternative 2 - Institutional Controls as the Navy's preferred alternative. Therefore, EPA believes that due to the low current risks and the lack of potential drinking water source on site, the Navy must monitor the contaminant discharge within appropriate regulatory constraints. Add RCRA Sections 264.91 through 264.100 to the ARAR tables as originally requested by EPA.

Response: The Navy maintains that 40 CFR 264.101 is the most relevant and appropriate portion of RCRA Subpart F for Site 07. Many of the requirements under

sections 264.90 through 264.100 are not warranted to ensure that the site continues to pose no unacceptable risks (e.g., requirements for monitoring for full Subpart F Appendix IX parameters—which includes chlorinated and non-chlorinated VOC, SVOC, PCB, pesticides, and metals—whereas the Site 07 COC are chlorinated VOC). The scope of the long-term monitoring plan will be determined during the Remedial Design phase and, at that time, the Navy, EPA, and RIDEM can ensure that the LTMP meets the subtantive requirements of Subpart F while still developing a flexible program which responds to site-specific conditions.

As agreed upon by the BCT, the components under Alternative 2 will protect human health and the environment. Containment and/or treatment of ground water is neither warranted (due to low risks which can be addressed through institutional controls) nor capable of being entirely effective (due to the presence of COC in fractured bedrock). The long-term monitoring program will provide the data to be used to ensure that the site continues to pose no unacceptable risks to human health and the environment. Although some reduction of COC concentrations through treatment may be possible, the lack of significant risks identified under current conditions indicate that treatment is not warranted. As presented in the FS, a technology for the containment of COC in fractured bedrock which would be effective, implementable, and cost-effective was not identified. The components under Alternative 2 (which includes long-term monitoring and 5-year reviews) demonstrate the Navy's desire to ensure the long-term protection human health and the environment even though current conditions show little risk.

2. **Comment 2, Page 3, Paragraph 5**. It is stated that data obtained from MW07-13S and local hydroprobe locations indicate that VOCs in the groundwater are not discharging to the wetland area. As shown on Figure 2-2 of the Phase III RI Report, the hydroprobe locations are a minimum of 200 feet from the wetland area as delineated on the figure which is considered too far of a distance to support this statement. Also, a one-time measurement on a screening-level basis in June/July of 1995 from these hydroprobe locations should not be used as a rationale for stating that VOCs are not discharging to the wetland area, especially in light of the shallow contaminant plume to the west of the wetlands, and the conceptual model indicating possible upwelling of contaminants from deeper zones. EPA generally requires at least 8 quarters of sampling to start to be able to understand system trends. One-time measurements are not sufficient data sets to take into account seasonal variations and yearly variations.

Navy Response: The Navy recognizes the need for additional data for the interior wetland area and is considering additional sampling in this area as part of the "Confirmatory Sampling" phase of the revised version of the conceptual LTMP being presented on 22 July 1997. If these data indicate that VOC may be discharging to the interior wetlands, then the Navy will include wetlands samples (possible sediment and/or surface water) to the monitoring program. The Navy intends for the monitoring program to be flexible such that the scope can be reduced/expanded in response to trends observed in the data over time.

3. **Comment 2, Page 4, Paragraph 4.** EPA suggested the addition of monitoring wells MW07-23S and MW07-24S to the LTMP. The Navy included MW07-23S but did not include MW07-24S in the LTMP. The Navy should include a contingency in the LTMP to monitor MW07-24S or MW07-20S in the future if contamination is detected in MW07-13S or MW07-11D. The LTMP should be dynamic enough so that during 5 year reviews of the data, if it is noted that a possibility exists for the plume to move in a different direction from what is currently understood, wells to be monitored can be changed to provide the best indication of exposure to the shoreline or wetland areas.

   In addition, MW07-21S should also be sampled for the NOAA parameters due to the question of these constituents being present in the groundwater since they were found in the sediments in the intertidal wetlands sampled during the Marine ERA investigation. Please coordinate with NOAA on this issue.

   Navy Response: The FS will state that the long-term monitoring program for Site 07 will be flexible in response to trends observed in the data. The scope (e.g., well selections and/or number of analytes) will be periodically reviewed, particularly during the 5-year reviews. Changes in scope will be agreed upon by the Navy, EPA, and RIDEM. Specific contingencies (e.g., alternate well locations as noted in the comment) can be developed during the Remedial Design phase during the scoping of the monitoring program.

   The available data do not indicate a need to monitor MW07-24S at this time (because both MW07-24S and the upgradient well MW07-13S were non-detect for chlorinated VOC). The Navy agrees that, if trends of increasing COC concentrations are observed in upgradient wells or in MW07-24D, then the BCT may consider including MW07-24S in the program. The long-term monitoring program will be flexible to respond to observed trends in the data.

   As per EPA's e-mail dated 8 July 1997, (which stated "The additional well...at the southern shoreline does not need to be sampled for the SVOC/Pest/PCBs."), MW07-21S will not be included in the initial confirmatory sampling phase for NOAA's requested parameters.

4. **Comment 2, Part C, Page 5, Paragraph 1.** The Navy did not respond to EPA's suggestion to consider an additional bedrock well in the location of existing MW07-11D. The Navy should consider this suggestion and provide a response.

   Navy Response: During the Phase III RI, VOC were non-detect in MW07-09R and were low in MW07-11D (2 ppb). MW07-09R and -11D were included in the conceptual LTMP because these wells are good candidates for indicating the extent of the plume to the east. If MW07-11R were to be installed, it is anticipated that samples would result in non-detects which would provide little information as to whether the plume is receding, stabilizing, or expanding. The Navy did not include MW07-11R because a more informative approach would be to monitor closer to the interpreted

plume boundary and look for trends in those wells (i.e., increasing concentrations in those wells may indicate a need to install MW07-11R in the future, whereas continued low/non-detect VOC concentrations in those wells would confirm that the site is not posing a risk).

5. **Comment 2, Part D, Page 5, Paragraph 2.** The Navy agreed that modifications were warranted to the monitoring program for Alternative 5 and should provide specific details as to how the relevant text and tables in the Feasibility Study will be modified.

Navy Response: The text has been modified to state that several piezometers (conceptually, this may include four pairs in total—where a pair of piezometers would be placed on either side of the wall, with two pairs per wall) would be monitored on either side of sheet pile walls to evaluate the effectiveness for controlling shallow and deep ground-water. This would include water level measurements and, as warranted, sampling for selected COC. In addition to the monitoring wells used to evaluate reaction wall performance, selected monitoring wells (conceptually, this may include 2 or 3 wells) would be monitored outside of the sheet pile walls to evaluate the effectiveness for controlling COC migration in shallow and deep ground water. Additional costs have been added to Tables 4-7 and 4-8 for the installation, maintenance, and monitoring of the piezometers/wells.

6. **Comment 2, Part D, Page 5, Paragraph 4.** Given the fact that exact groundwater discharge locations to the harbor near shore environment and onshore wetlands have not been identified, but are suspected, and; since the potential areas of discharge to Allen Harbor and the interior wetlands are large but relatively few sediment samples were collected near Calf Pasture Point in relation to the area in question, it seems appropriate that additional rounds of sediment sampling be proposed. If this sediment sampling does not identify the presence of contamination related to the site, further sediment sampling could then be based on the monitoring of groundwater quality in the near shore/near wetland wells.

Navy Response: The Navy believes that the existing data are sufficient to demonstrate that Site 07 poses no unacceptable risk to human health and the environment (other than drinking/showering with deep/bedrock ground water—which will be addressed through institutional controls) as outlined in the HHRA, the Marine ERA, and the Freshwater/Terrestrial ERA. The conceptual LTMP includes shoreline ground-water/seep sampling and long-term monitoring in near-shore wells to ensure that site COC (VOC) continue to pose no risk. Sampling of offsite sediment for VOC would not provide useful information for the monitoring program because VOC which are detected (anticipated to be low or non-detect) would be difficult to link to Site 07 due to the dynamic nature of the entrance channel. More useful information would be obtained from monitoring VOC trends in the near-shore wells. If increasing concentrations are observed, then the program can be expanded. As will be discussed on 22 July 1997 for the conceptual LTMP, temporary piezometers can also be considered for collecting samples from the shoreline to augment the monitoring well

data. The low site risks indicate that additional offsite sediment sampling is not necessary, particularly considering that COC in sediment were not the same as COC identified onsite. NOAA has expressed concern about toxicity from non-VOC along the western shoreline (see response to comment 3). Accordingly, the Navy has included additional sampling for PAH, PCB, and pesticides in that area to demonstrate that these constituents are not related to Site 07.

7. **Comment 8, Page 6.Comment 77, Page 10.** See Comment 2, Part D, Page 6, Paragraph 3.

Navy Response: See response to comment 6. Due to the low site risks and the lack of impact from site COC in offsite media, the Navy believes that a flexible, long-term ground-water monitoring program and seep sampling are appropriate at this time.

8. **Comment 89, Page 11& 12, Paragraph 3 on both pages.** This paragraph was meant to demonstrate to the Navy that the USGS data do not, in all cases, confirm that the existing well screen locations are properly placed and, as a result, EPA recommended the re-installation of certain wells. The Navy's response, in referring to the LTMP, only pertains to new wells to be installed at the Site. The Navy should respond to the question as it was posed.

Navy Response: In the referenced paragraphs, EPA commented that wells MW07-10, -12, -23, and -24 may need to be reinstalled based upon the USGS logging data. These locations are discussed individually below.

MW07-10: EPA commented that a freshwater lens may be at 20 ft bgs while the well screens at this cluster at 10 ft bgs and 25 to 35 ft bgs. Please refer to Figure 4-38 of the Draft Final Phase III RI. The shallow and deep screened intervals extend across the permeable zones where COC transport would be suspected. The depth of 20 ft bgs is within a substantial silt layer which would restrict COC transport (low concentrations are anticipated) and would not pose a risk anyway (risks are associated with drinking/showering with affected ground water and a production well in the silt layer is unlikely due to low recovery). Also shown in this figure is that the salinity at the shallow and deep intervals [both 0.6 parts per thousand (‰) salinity] are borderline "fresh" (defined as 0.5‰ salinity); therefore, although a slightly lower salinity may have been measured in the silt layer by the USGS, this area is unlikely to have a salinity gradient which would generate the salt wedge effect seen closer to the southern shoreline. An additional well screened in the silt at this location does not appear warranted (note: the screened interval in the deep location does extend several feet into the silt layer).

MW07-12: EPA commented that a freshwater lens may be present 15 ft bgs whereas the well is screened at 25 to 35 ft bgs. Please refer to Figure 4-39.

Again, installing a well 15 ft bgs at this location would place it within several feet of silt where COC concentrations and risks are anticipated to be low. The salinity measured in this well (3.7‰) is within the brackish region and the salt water wedge effect may not be substantial in this area.

MW07-23: EPA commented that a freshwater lens may be present 15 ft bgs whereas the wells are screened at 10 ft bgs and 35 ft bgs. The Navy acknowledges that additional information may be available from the proposed depth; however, the existing information and proposed shoreline seep sampling would adequately address risks in this area. Please refer to Figure 4-36. As evidenced from the MW07-21 data, the ground-water VOC plume has already been identified in this area. An additional well at the MW07-23 location may help only to define the extent of the plume and not to provide more information about site risks. Because the concern in this area is discharge to the shoreline, the proposed shoreline seep sampling described in the conceptual LTMP would extend over this area and provide data to be used for evaluating site risk.

MW07-24: EPA commented that a freshwater lens may be present 32 ft bgs whereas the wells are screened 10 to 20 ft bgs and 42 to 52 ft bgs. Please refer to Figure 4-36. During well installations, similar headspace screening results were obtained at the selected deep interval and at a shallower location just below the silt layer (in the vicinity of where EPA/USGS suspects the freshwater lens). Because chlorinated VOC were present, the deeper location was selected for the screened interval. Previously, the Navy recommended that monitoring of MW07-24S/D may not be required due to the low concentrations in upgradient wells MW07-13 and -11. EPA commented that USGS logging was not complete at these two locations and it was not known whether they were screened in the optimum locations. The Navy will re-evaluate the screening of MW07-24 once USGS logging has been completed at MW07-13 and -11. However, it is noted that (1) upgradient well MW07-13D is screened across the majority of the deeper, more permeable layer (Figure 4-39); (2) long-term monitoring at the fringe of the plume may provide more information than in downgradient wells which are currently non-detect; and (3) the LTMP will be flexible such that if trends of increasing concentrations are detected in upgradient wells, then MW07-24D could be added to the monitoring program.

EPA COMMENTS ON THE CONCEPTUAL LONG-TERM MONITORING PLAN

Navy responses to EPA's comments on the previous LTMP (dated 28 May 1997) are being deferred at this time for consideration during the design/development of the LTMP, the conceptual version of which will be presented during the 22 July 1997 BCT meeting.